

✓ Sub B6 1. An isolated polypeptide comprising an RNase P consensus sequence wherein said polypeptide has RNase P protein activity.

2. The polypeptide of claim 1, wherein said polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 20-38.

✓ 5 3. An isolated nucleic acid sequence, wherein said sequence encodes a polypeptide containing an RNase P consensus and said polypeptide has RNase P protein activity.

10 4. The nucleic acid sequence of claim 3, wherein said sequence encodes a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOS: 20-38.

5. The nucleic acid sequence of claim 4, wherein said sequence is selected from the group consisting of SEQ ID NOS: 1-19.

6. A transgenic host cell, wherein said cell comprises a heterologous nucleic acid sequence encoding the polypeptide of claim 1.

15 7. An antibody that specifically binds to the polypeptide of claim 1.

8. A method of identifying an antibiotic agent, said method comprising:
i) obtaining an RNase P holoenzyme comprising the polypeptide of claim 1;
ii) contacting said holoenzyme with an RNase P substrate in the presence and in the absence of a compound; and
20 iii) measuring the enzymatic activity of said holoenzyme;

wherein a compound is identified as an antibiotic agent if said compound produces a detectable decrease in said RNase P enzymatic activity as compared to activity in the absence of said compound.

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- 5 9. The method of claim 8, wherein said polypeptide is substantially identical to a polypeptide of SEQ ID NOS:20-38.

10. The method of claim 8, wherein said activity is measured by fluorescence spectroscopy.

11. The method of claim 8, wherein said RNase substrate is fluorescently tagged ptRNA^{Gln}.

- ✓ 10 12. A method for making a ptRNA^{Gln}, said method comprising annealing two RNA fragments together by heating to about 65°C to about 80°C for about 5 minutes, followed by cooling to 20-25° C.

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- 15 13. The method of claim 8, wherein said fluorescence analysis is carried out in a buffer comprising 10-40 mg/ml carbonic anhydrase and 10-100 µg/ml polyC.

14. The method of claim 13, wherein said buffer further comprises at least one of the following:

0.5-5% glycerol;

10-100 µg/ml hen egg lysozyme;

20 10-50 µg/ml tRNA; or

1-10 mM DTT.

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